

**CUSTOMS ACE PROGRAM MANAGEMENT:
ACE Development at Risk From
Incomplete Management Systems**

OIG-02-102

July 9, 2002



Office of Inspector General

The Department of the Treasury

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Abbreviations

ACE	Automated Commercial Environment
ACS	Automated Commercial System
CBA	Cost Benefit Analysis
CMM	Capability Maturity Model
CMO	Customs Modernization Office
Customs	United State Customs Service
DBR	Desired Business Results

Contents

eCP	e-Customs Partnership
ELCM	Enterprise Life Cycle Methodology
IBM	International Business Machine
IBR	Integrated Baseline Review
IDEAL	Initiating, Diagnosing, Establishing, Acting, and Learning
IPT	Integrated Product Team
IT	Information Technology
OIG	Office Of Inspector General
OMB	Office of Management and Budget
PBMS	Performance Based Management System
RMS	Requirements Management System
SA-CMM	Software Acquisition Capability Maturity Model
SEI	Software Engineering Institute
TAG	Technology Architecture Group
TRC	Technical Review Committee

July 9, 2002

Robert C. Bonner
Commissioner
U.S. Customs Service

The development of the Automated Commercial Environment (ACE) is a massive and multifaceted effort that is critical to the long-term success of the U.S. Customs Service (Customs) mission. Our audit reviewed Customs program management over ACE development for the first 6 months of this 4-year program. In the first 6 months the Customs Modernization Office (CMO) was simultaneously working to: form the various contractor, trade and Customs offices into an effective partnership; develop an integrated program management system, enterprise architecture, and user requirements; and lay the foundation of plans and processes necessary to manage the modernization effort. In our opinion, the major long-term risk to ACE development would be a continued emphasis on schedule over quality and completeness.

Results in Brief

We found that the six management control systems reviewed were not fully implemented, the integrated baseline reviews were not performed, and the initial deliverables from the prime contractor had significant deficiencies which required re-work. Customs long-term program management plans are basically sound. Therefore, ACE can be successfully developed, if both Customs and its e-Customs Partnership (eCP): adequately staff the effort; communications are improved; management control systems are fully implemented; integrated baseline reviews are conducted; and the quality of future deliverables improves. We made six recommendations to improve program management in these areas.

Customs concurred with our recommendations. The complete text of Customs response is included in Appendix 6. This audit was the first in a series of current and planned OIG audits of ACE development. The purpose of this report is to make recommendations to improve the management of ACE development. We briefed the CMO Director on the findings in this report on March 4, 2002. Our audit work was performed from August 2001 through March 2002 at Customs headquarters; the National Data Center in Springfield, Virginia; the Customs Eisenhower facility in Alexandria, Virginia; the eCP offices in Springfield, Virginia; and trade meetings in Crystal City, Virginia. A more detailed description of our objective, scope and methodology is provided in Appendix 1.

INTERIM REPORT ON THE ADEQUACY OF STAFFING

On January 15, 2002, we issued a draft interim report, which addressed staffing, communications, and scheduling issues. The report concluded that Customs did not yet have the people and systems in place to adequately manage the development of ACE. Customs accepted our recommendations and the final interim report (OIG-02-058) was issued on March 4, 2002. In response to our interim report, the CMO will develop a human resources strategy by September 30, 2002. Further, the CMO has defined a new organizational structure for managing the developmental phases of the Modernization program that more than doubles the government positions. Additionally, prior to proceeding in each of the subsequent 6 releases, the Customs risk environment will be re-assessed and mitigation strategies will be developed to meet cost and quality targets. This report and the interim report, taken together, represent the results of our first audit. This report will not repeat the findings and recommendations in the interim report.

Background

The mission of Customs is to ensure that all goods and persons entering and exiting the United States do so in accordance with all United States laws and regulations. The Customs Modernization Program is a 15-year, \$5 billion effort to modernize Customs automated systems. Also, the Modernization Program will develop

and document repeatable processes, and update the Enterprise Life Cycle Methodology (ELCM). The ability of Customs to process the growing volume of imports while improving compliance with trade laws depends heavily on successfully improving the trade compliance process and modernizing supporting automated systems. Therefore, the first effort is to replace the Automated Commercial System (ACS) with ACE to modernize Customs commercial programs. According to Customs, ACE will not only replace ACS, but will transform the way Customs does business. ACE will enable Customs to process and monitor import and export shipments and related trade activity more efficiently through trade accounts versus individual transactions. ACE will enable Customs to release cargo more efficiently by integrating international law enforcement intelligence, commercial intelligence, and data mining results to focus efforts on high-risk importers and accounts. The processes, management, and ELCM developed for ACE will be used for subsequent modernization efforts.

On April 27, 2001, Customs awarded a 5-year, \$1.3 billion contract to eCP, a coalition of contractors led by International Business Machine (IBM) Global Services. While the initial work on ACE started on August 13, 2001, negotiations on the first three task orders were not completed until September 28, 2001. The first three task orders under the contract were: Task 1, Program Management; Task 2, Enterprise Engineering; and Task 3, Requirements and Planning. Currently, Customs plans to implement ACE over the next 4 years.

An Executive Steering Committee, Chaired by the Commissioner of Customs, provides oversight and guidance to the CMO in implementing the Modernization Program. The CMO is the program office responsible for ACE development. The support contractors MITRE and Robbins-Gioia conduct much of the work of the CMO. MITRE is an independent not-for-profit corporation chartered to work in the public interest. MITRE operates a Federally-funded research and development center for the Treasury. MITRE assists the CMO with the strategic, engineering, and architecture functions. MITRE also supports risk management, and the independent verification and validation of deliverables. Robbins-Gioia is a consulting company that provides program management

services to government agencies and provides strategic implementation and support services for complex, high-risk business and technical endeavors. Robbins-Gioia provides significant program management support to the CMO. Robbins-Gioia also assists the CMO with executive level support, integration leadership, business leads, team leads, and team experts.

Findings and Recommendations

Finding 1 **Management Control Programs Need To Be Fully Implemented**

There are a number of management programs necessary to manage the development of ACE. We selected six programs for review that, when taken together, would establish a critical management control structure. If properly implemented and integrated, these programs should provide Customs with a comprehensive overall management control system to monitor the efficiency and effectiveness of ACE development. The CMO issues plans to provide the high-level guidance for these programs. For each plan the CMO establishes a number of processes to implement the plans. Our audit evaluated the implementation of the six selected programs by reviewing the requirements stated in the plans and the institutionalization of the described processes.

The six management control programs that we reviewed were not fully implemented as of February 28, 2002. Of the six programs, three had approved plans, however, the related processes were completed for only one of the six programs (Appendix 2). All six programs are essential to the success of ACE development. However, we could not evaluate the integration and effectiveness of the control programs since they had not been fully implemented. Staffing of the management control programs was not sufficient to fully implement the programs timely. Further, not all processes have process owners assigned to monitor process procedures and ensure that they work.

As a guideline for managing the development of ACE, Customs adopted the Software Engineering Institute's (SEI) Software

Acquisition CMM (SA-CMM)¹ and the SEI's IDEALSM (Initiating, Diagnosing, Establishing, Acting, and Learning) model. The CMO is currently a CMM Level 1 organization that, with the assistance of the prime and support contractors, is attempting to become a Level 2 organization this year and a Level 3 organization by the end of ACE development in 2005 (See Appendix 3 for an explanation of the CMM levels).

Risk Management Program

Of the six programs we reviewed, risk management was the most complete. As of February 2002, there were five procedures being drafted to support risk processes.

A Risk Management program provides early detection of potential risk, thus allowing management to mitigate or develop contingency plans prior to the risk materializing. The Risk Management program is guided by several policies. The Clinger-Cohen Act of 1996 (also known as the Information Technology (IT) Management Reform Act, Division E of Public Law 104-106) requires agencies to have a process for assessing and managing the risks of their information technology acquisitions. Office of Management and Budget (OMB) Circular A-130 requires agencies to establish and maintain a capital planning and investment control process that identifies and mitigates risks associated with each information system. The Federal Acquisition Regulation 39.102, states, in part, that: (1) agencies should analyze risks, benefits, and costs prior to contracting for IT; and (2) contracting and program officials are jointly responsible for assessing, monitoring, and controlling risk when selecting projects and during program implementation.

MITRE is implementing the risk program processes for Customs. However, two processes need additional emphasis:

- The development of contingency plans.
- The identification of interdependencies within projects.

¹ Capability Maturity ModelSM is a service mark of Carnegie Mellon University, and CMM is registered in the U.S. Patent and Trademark Office.

As the web portal was not operational, the CMO risk database was only accessible to MITRE and not to others in the organization. The combination of the CMO and eCP risk databases on the web portal will facilitate communication of risks to other managers. Also, a database for lessons learned was still needed. Points of contact for the processes were assigned when a risk needed mitigation, however, there were not always process owners officially assigned for managing a process.

Independent Verification and Validation Program

On March 11, 2002, the CMO Director stated that the plan for this program was in draft. Therefore, we could not assess the implementation of the program. The purpose of the program is to provide independent assurance that Customs receives deliverables that meet contract requirements. MITRE has a process in place for the review of documents delivered from the prime contractor, but the process is being revised based on lessons learned. Processes for reviewing deliverables for software development and commercial-off-the-shelf software were still being developed.

Process Improvement Program

The purpose of the process improvement program is to ensure processes are institutionalized, including key process areas and to ensure support to the organization by the continual improvement of processes. Robbins-Gioia is responsible for the implementation of this program. The CMO is reviewing the draft plans and processes, which will guide the implementation of the Process Improvement Program. As of February 28, 2002, not all processes have process owners, which makes ensuring if processes have been institutionalized more time consuming.

Performance Measurement Program

The performance measurement program is still in the planning stage. The program encompasses the development, implementation, and institutionalization of metrics in support of the enterprise-wide Customs Modernization Program. In this effort, Customs will use performance measures to assess the degree to

which the eCP meets desired business outcomes and measurable objectives. The desired business outcomes and objectives form the basis for the award fee plans. Performance measures will be selected and agreed to on a task order basis.

To develop the program, Customs approved metric plans and assigned Robbins-Gioia the responsibility to implement the program. The CMO Program Control Office has the primary responsibility for program metrics. The primary metrics processes are tailoring, applying, evaluating, and implementing. The applying, evaluating, and implementing processes need to be in place for the program to be fully implemented and help management achieve its metrics objectives. During our audit, the performance measures program had one Robbins-Gioia employee responsible for implementing required processes. However, the employee performed multiple duties related to other program control areas. In early December 2001, the employee started gathering metrics relating to risk, issues, cost, and scheduling. By February 28, 2002, further tailoring of metrics took place. However, the metrics were not being shared with other teams in the organization since they were still in development. By not sharing data, interdependencies may not be considered, which could delay this and other programs.

Quality Assurance Program

As of February 28, 2002, the program's five main processes have not been implemented. The Quality Assurance program provides CMO management with objective oversight into modernization processes and their associated work products and services to support delivery of high-quality products and services. Also, the program helps to establish and improve the overall quality of CMO's processes, work products and services. Robbins-Gioia is responsible for the implementation of this program. During our audit, only one contract person was working, part time, on implementing the processes. Also, not all processes had process owners to perform Quality Assurance Program requirements.

Award and Incentive Fee Program

As of February 28, 2002, the CMO has made an effort to implement the program. However, implementation was delayed because the draft Award Fee Plan was not approved until January 22, 2002, nearly 5 months into the contract. This also delayed the implementation of processes by the Business Management Team. A single award fee pool was established to motivate superior technical quality, performance at or under cost and on or ahead of schedule, and overall program management. Having a single award fee pool will enable the prime contractor's performance to be evaluated against the total program performance.

The prime contractor participated in early October 2001 in drafting the Award Fee Plan for Period 1 of the contract. Period 1 started on August 13, 2001, and ended on May 12, 2002 (9 months), with an award pool of \$1,000,000. As of March 8, 2002, the CMO had not performed interim contractor performance reviews. The purpose of interim reviews is to give enough time for the contractor to correct any deficiencies prior to the final determination of the award fee amount. Therefore, Customs lost an opportunity to discover deficiencies and communicate them to the contractor earlier.

Conclusion

In our opinion, the implementation and integration of effective management control programs is essential for Customs to adequately manage the development of ACE. The six management control programs need to be implemented prior to the development of software in Task Order 4. Due to the importance of these six programs, efforts must be focused on expediting their implementation.

Recommendations

The Commissioner of Customs should ensure that:

1. A schedule is established to expedite the complete implementation of all six management control programs.

Management Comment. Customs concurs with our recommendation and has taken actions to further implement the management control programs. Customs has scheduled the last of the six programs to be completed by March 2003.

OIG Comment. The actions taken and planned by Customs satisfy the intent of our recommendation.

2. Staffing is adequate to fully implement the programs properly, including the assignment of process owners to the specific processes within each of the programs.

Management Comment. Customs concurs with our recommendation and will identify all process domain owners by August 2002.

OIG Comment. The actions taken and planned by Customs satisfy the intent of our recommendation.

Finding 2

Integrated Baseline Reviews Not Conducted

The contract Task Order 1-2, titled Integrated Baseline Review (IBR), required IBR's to be performed by October 13, 2001. Subsequently, Customs revised the due date to January 18, 2002. However, as of March 8, 2002, an IBR had not been performed. The reason is partially due to Customs and eCP working to establish an agreed upon format and schedule for an IBR review. The failure to conduct required IBR's left Customs without a critical tool to identify problems.

The IBR is performed to ensure that reliable plans and performance measurement baselines are established to capture the entire scope

of work and are consistent with contract schedule requirements. Also, IBR's are performed to ensure that adequate resources are assigned to complete program tasks. An IBR is a program manager-led survey of the contractor's work plan, or contract performance measurement baseline. The ACE Program technical team ascertains the work plan executability, and identifies risk areas. An IBR includes the following steps:

- ♦ Identify plan
- ♦ Identify schedule
- ♦ Investigate resource loading
- ♦ Investigate performance measurement approach
- ♦ Investigate communication approach
- ♦ Investigate baseline control
- ♦ Investigate forecasting
- ♦ Identify risks
- ♦ Level expectations

An IBR is a critical in-depth review of the planned work, which should be conducted early in the project. Delays in conducting an IBR are generally a warning sign that the contractor is not ready or is following an incorrect approach. An IBR is a joint effort where the contractor gains insight into its customer, and the customer gains insight into its contractor and an early warning of deviations from plans. It is very important to perform an IBR because it establishes a baseline to monitor how well eCP is managing: (1) agreed upon items to be accomplished; (2) when items will be done; (3) how much items will cost; (4) risk; and (5) the variance threshold of 10 percent. Without baseline reviews, the progress of deliverables cannot be accurately assessed, and used for better planning as well as for timely action on contingencies and delays.

On January 31, 2002, Customs held a meeting to discuss the IBR format with Robbins-Gioia and MITRE. During the meeting, emphasis was given to the importance of adherence to standards and government regulations such as Clinger-Cohen, OMB A-11, and ELCM. In addition, it was decided that the Customs IBR team should have the following members:

-
- IBR Team Lead – a Customs employee within the Program Management Office
 - Cost Analyst - required for a Performance Based Management System (PBMS)
 - PBMS Expert - required by OMB A-11 300.8
 - Risk Specialist – needed for risk assessments and mitigation plans
 - Schedule Specialist – needed for scheduling and forecasting
 - Technical Expert - more than one may be needed
 - Contracts Specialist – assures compliance with the baseline contract.

On February 1, 2002, Customs Contracting Officer for the eCP contract presented a letter to eCP disclosing areas of concern. One of the areas addressed was the IBR deliverable. At the time of the letter the first IBR had not been scheduled and was already 2 months past the initial due date. The impact of not having this important review is significant in terms of measuring work accomplished in the context of costs incurred.

A February 28, 2002 response from eCP, stated that, they have been working jointly with Customs to establish an agreed upon IBR format and schedule. Also, that eCP would commit to take the initiative and schedule a meeting with Customs to establish the format, process and schedule with the ACE Program.

IBR requirements include:

- An evaluation of risks against projected lifecycle costs and benefits, as required by Clinger-Cohen.
- Submissions consistent with OMB A-11, Section 300.8 requirements to maintain all of the baselines, original and current, including tracking cost, scheduling, performance variances, and to establish a corrective action threshold of ten percent variance. In addition, the status of the effectiveness of IBR corrective actions, should be reported.

Recommendation

The Commissioner of Customs should ensure that:

1. The IBR's are regularly conducted for Task Orders issued after March 2002, as well as for Phase II of Task Order 2.

Management Comment. Customs concurs with our recommendation and has conducted or scheduled appropriate IBR's. All planned IBR's are scheduled to be completed by June 30, 2002.

OIG Comment. The actions taken and planned by Customs satisfy the intent of our recommendation.

Finding 3 ACE Deliverable Processing Needs Improvement

The processes for reviewing ACE deliverables need improvement to be more timely and effective. Customs and eCP were under tight time and resource constraints to complete the deliverables for the first three Task Orders. To attempt to meet the established milestones, as well as mitigate obstacles, deliverables were being submitted to Customs that needed significant rework to reach an acceptable state. The submission of deficient deliverables resulted in a review process, usually involving several iterations, that was labor intensive and time consuming. Further, since some deliverables were prepared as high level documents and others were conditionally accepted, there will be additional work necessary in the future to meet Customs needs and expectations.

On February 1, 2002, the Customs Contracting Officer issued a letter to eCP listing Customs concerns with their contract performance. Areas of concern included staffing, quality of deliverables, engineering approach, requirements development, program reviews, and program integration. The letter stated that more than 75 percent of the 25 contract documents delivered to date have significant deficiencies requiring rework. Further, the letter stated that, "The eCP is responsible for developing the plans and processes to produce the work that meets acceptable standards." On February 28, 2002, eCP responded to the criticism

of its performance on the Customs Modernization Contract. The response states, "We do recognize that the quality of the initial deliverables were not up to our expectations." Factors that contributed to the problems included:

- Funding
- Scheduling
- An inadequate eCP editing process
- Lack of a collaborative development process
- Lack of a mutually agreed acceptance process

Deliverables are prepared by eCP and then submitted to Customs for acceptance review. Customs then has 15 workdays to review the deliverable and submit written comments. If a deliverable is not accepted, eCP has 10 workdays to respond and resubmit the deliverable. After the review process, the due date is the target date for the acceptance by Customs of a fully completed deliverable.

There were 28 subtasks for eCP to complete in the first three task orders of the contract (Appendix 4). We selected for review a judgmental sample of 10 of the 50 deliverables associated with these subtasks (Appendix 5). Five of the selected deliverables were completed an average 28 days late. Of the remaining five selected deliverables at March 5, 2002, two were not completed, two were pending Customs review, and one was accepted that was not complete. The IBR deliverable associated with Task Order 1 Subtask 2 (Task 1-2) was discussed in the prior section of this report. The result of our review of the remaining nine selected deliverables follows.

Cost Benefit Analysis Conformance Approach and Plan Task 1-3

The Cost Benefit Analysis (CBA) Conformance Approach and Plan deliverable was due on November 2, 2001, and accepted on November 8, 2001. However, there was additional work necessary to complete the deliverable, due to the wording of the deliverable proposal and incomplete clearances for eCP personnel. After a collaborate effort between the CMO and eCP, the deliverable was completed on December 14, 2001. eCP stated

that they were not responsible for the development of the overall CBA document, but just for “quantitative inputs” into the CBA. Also, eCP said that some of the areas that affected their work were not having access to data, such as, class and labor rates. Another factor affecting the deliverable was the lack of a formal Integrated Product Team (IPT). The IPT did not have a charter and minutes of meetings were not being maintained. The IPTs need to have agreed upon charters that identify responsibilities and lay the groundwork on how they will function. Also, documentation, such as minutes of meetings, is needed to support a repeatable process.

Risk Management Process Task 1-5

The Risk Management Process deliverable was due on October 18, 2001, and accepted 23 workdays late on November 20, 2001. Our audit found that instructions on how to use the Risk Assessment Checklist contained incorrect references to tables in the Risk Management Process Document. The incorrect references included important tables for determining the likelihood of risk materializing, the significance of the risk to the ACE program, and tables defining the individual risk level. MITRE personnel stated that the error was due to a busy schedule that did not allow time to check everything over and over again. As a result, eCP will ensure table references are correct in the next iteration of the Risk Assessment Checklist instructions.

Requirements Management System (RMS) Task 1-9

The RMS scheduled due date was November 13, 2001. Customs granted conditional acceptance of eCP’s usage of the RMS tool on December 4, 2001, pending an official acceptance after the Customs Technical Review Committee (TRC) approval. Customs stated that they would not accept any invoices related to the RMS tool, or any other tools until the TRC’s approval. The RMS tool was installed and configured by eCP on its own infrastructure using a commercial-off-the-shelf product, and available to eCP personnel involved with ACE requirements development. However, the product was not approved by the TRC, as required by the Technical Insertion Process and Investment Management Process for inserting IT products into the Technical Reference Model. As of

March 8, 2002, the Technology Architecture Group (TAG) was still evaluating the RMS tool, which then must go to the TRC for review and approval.

Enterprise Infrastructure Task 2-4

The Enterprise Infrastructure deliverable has two due dates. The first due date is on February 13, 2002 for the draft version, and the second, on April 12, 2002 for the final version. As of March 8, 2002, comments on the draft were still in process. According to eCP, the deliverable was affected by not having completed background investigations for key personnel. This prevented eCP personnel from having access to "As Is" infrastructure and inventory information. On January 10, 2002, eCP had identified a risk that if clearances were not in place for Task Order 2 personnel, the schedule and completeness of deliverable products would be impacted. To work around the clearances, eCP personnel developed a higher level of theoretical architecture based on a reliance on work performed by MITRE. Also, eCP continued to capture "As Is" documentation from various sources and had it validated by TAG and MITRE.

Customs has already previewed the deliverable document and verified that it is being written at a very high level, needing more work and clarification. Accepting high-level documents will require Customs to gather additional detail later when it could be more expensive and more difficult to change the documents.

CMO Web Portal Task 2-7

The CMO Web Portal was not delivered to Customs. While the due date was December 20, 2001, Customs has not yet received an operational web portal. The failure to establish a portal has hampered communications between the various contractors and Customs. Specifically, the delay in the installation of the CMO Web Portal has hindered ACE collaboration efforts and the sharing of information, and has also limited the Program Management Reporting System to hardcopy distribution lists. The CMO Web Portal slippage is due to backordered products, lack of security clearances, support infrastructure, and lack of security policy.

Also, eCP discovered that their own proposed system would not meet Customs systems security requirements for this type of information. On February 14, 2002, the Contracting Officer asked that eCP provide a schedule supporting the installation of the portal to include: dates; interdependencies; Customs roles; assessment of the impact of the late delivery to the ACE Program; plus eCP's mitigation plan. The Contracting Officer stated that this information was due by February 22, 2002, but as of March 8, 2002, a response had not yet been received.

Desired Business Results Task 3-1

The Desired Business Results (DBR) was due on December 21, 2001, and accepted 38 workdays late on February 19, 2002. On January 11, 2002, the Customs Contracting Officer sent a memo to eCP stating that the overall performance in the development of this deliverable was unacceptable. Customs spent considerable time reviewing several iterations of deliverable documents and collaborating with eCP. However, instead of receiving a document of acceptable quality in the December 21, 2001 version, Customs had 111 additional comments, showing that it still needed substantial work. Customs finally accepted the deliverable on February 19, 2002, with a requirement that eCP perform a comprehensive and professional editing of the document to correct the numerous grammatical and style errors.

Transition & Sequencing & Change Management Plan Task 3-4

The Transition & Sequencing & Change Management Plan was due on January 30, 2002, and accepted 23 workdays late on March 5, 2002. Customs review of this document resulted in several iterations and numerous comments and responses between Customs and eCP. Customs conditionally accepted this plan on January 25, 2002, deciding that it was sufficient for proceeding with Increment 1, Release 1, but still needed more work for Increment 1 Release 2. The Plan was accepted by Customs with no further comments. However, in response to several Customs comments requesting more specific information, eCP responded that the deliverable was written at a high level. Further, eCP

stated that details Customs requested on transition needs, the business process, and statutory, regulatory, and policy changes could be provided at a later date.

ACE CBA/Investment Strategy Task 3-7

The CBA Investment Strategy was due on January 11, 2002, and accepted 35 workdays late on March 5, 2002. On November 27, 2001, the Commissioner of Customs set a 4-year goal for the completion of ACE. The CBA/Investment Strategy delivered by eCP on November 19, 2001, was based on a 5-year program. Accordingly, eCP had to revalidate the pricing of the ACE program as a 4-year program.

To complete this CBA/Investment Strategy deliverable under tight CMO time constraints, eCP stated the following actions were taken:

- To collect importer trade data for the CBA, surveys were sent to importers on December 17, 2001, with a 5-day turnaround. As a result, only 20 responses were received out of the 250 importers contacted. A CMO risk was that if a sufficient number of surveys were not returned, the limited survey information might be insufficient to develop meaningful or accurate cost and benefit data for the trade. eCP used this limited survey data anyway, along with conservative estimates to establish significant trade benefits for the ACE Program. Of the \$24.2 billion in quantified benefits for ACE shown in Table 1 of the CBA/Investment Strategy deliverable, trade benefits totaled \$19.2 billion.
- The ACE CBA/Investment Strategy document contained a SEI Software Validation Checklist. The question on issue 4.4 of the checklist is if uncertainties in parameter values had been identified and qualified; and the question on issue 4.5 is whether a risk analysis had been performed, and risks that effect cost or schedule had been identified and documented. eCP's response to both issues was that due to limitations in the available schedule, proper analysis and reviews were not conducted. Issue 5.1 inquired as to whether Customs

management reviewed and agreed to the values for all descriptive parameters before costs were estimated. eCP responded that a detailed review with Program Management was not possible due to schedule limitations.

Top Level Ace Program Plan Task 3-8

The ACE Program Plan deliverable was due on January 30, 2002, and accepted 23 days late on March 5, 2002. The eCP response to some of the issues raised by Customs comments was that they would be resolved at a later date. These issues included: inconsistencies across all eCP documents; the organization section did not provide compelling evidence that there is a management structure in place to effectively manage the ACE Program; the Customs interfaces and lines of communication section does not provide sufficient information to understand how the eCP plans to interface with Customs; and the Automated Targeting System is not included in the table from "As-is" to "To-be". While eCP was aware of these issues, they decided to move ahead with the new task orders rather than correcting the old ones.

Recommendations

The Commissioner of Customs should ensure that improvements are made in the processing of deliverables. Specifically,

1. Performance measures based on the deliverable quality issues, noted by Customs and this report, should be finalized. The measures should have a direct significant effect on the determination of the award fee amount.

Management Comment. Customs concurs with our recommendation and is using quality metrics for assessing performance in period 1. For period 2, the metrics will be reassessed by the Award Fee Working Group on a continuing basis. Also, for period 2, Customs has added a fifth outcome, Planning.

OIG Comment. The actions taken by Customs satisfy the intent of our recommendation.

2. The deliverable review process should ensure that products accepted are complete, edited, meet acceptable standards and written at a level needed by users.

Management Comment. Customs concurs with our recommendation and conducted a joint lessons learned session with eCP in late February. The session resulted in 28 action items that should directly contribute to better quality deliverables. The actions are scheduled to be completed by September 30, 2002.

OIG Comment. The actions taken and planned by Customs satisfy the intent of our recommendation.

3. The CMO should establish a formal system to track items and tasks that are not completed on accepted deliverables, but are agreed to be performed by eCP at a later date.

Management Comment. Customs concurs with our recommendation and will formalize an administrative procedure to track open issues by July 30, 2002.

OIG Comment. The actions taken and planned by Customs satisfy the intent of our recommendation.

* * * * *

We appreciate the courtesies and cooperation provided to our staff during the audit. If you wish to discuss this report, you may contact me at (202) 927-5171 or Gene Wendt, Audit Manager at (713) 706-4611 ext. 242.

/s/
Edward G. Coleman
Director, Information Technology Audits
Office of Inspector General

The objective of this audit was to determine whether ACE Program Management had been appropriately planned and was in compliance with relevant laws, Treasury Directives, and sound business practices. To accomplish this objective, our audit work included the following:

- A CMO staffing analysis and review of the ACE development schedule.
- Interviews conducted with various Customs and contractor officials at Customs Headquarters, National Data Center in Springfield, Virginia, the eCP facility in Springfield, Virginia, and Customs Eisenhower facility in Alexandria, Virginia.
- A review of the following six management control programs to evaluate their implementation, effectiveness and integration:
 1. Risk Management
 2. Independent Verification and Validation
 3. Process Improvement
 4. Performance Measures
 5. Quality Assurance
 6. Award and Incentive Fee
- A judgmental sample of 10 contract deliverables was selected to evaluate the adherence to schedules, reviews conducted by Customs, acceptance process, and communications between Customs and contractors regarding the deliverables. We did not conduct a technical assessment of the deliverables.
- Attended trade support meetings held in Crystal City, Virginia. Also, attended various recurring meetings held by CMO, support contractors, and eCP related to ACE development.
- Coordinated our audit efforts with the General Accounting Office auditors.

We conducted the audit from August 2001 through March 2002 in accordance with generally accepted government auditing standards.

Appendix 2
Status of Management Control Programs
As of February 28, 2002

<u>Programs</u>	<u>Plans Approved</u>	<u>Status</u>	<u>Summary of Program Status</u>
Risk Management	3-16-01	Partial	Procedures for processes are still being developed. Emphasis needed on requirements for contingency plans and the identification of interdependencies within projects. Database needs to be accessible to other management teams and lessons learned need to be captured.
Independent Verification and Validation	In Draft	Partial	Processes for the Independent Verification and Validation program for the review of documents continue to be modified to improve the review process for deliverables. Plans are in draft detailing processes for software development and for commercial-off-the-shelf software reviews.
Process Improvement	In Draft	Partial	Process Action Teams chartered and working on identifying, reviewing, and defining processes for seven Key Process Areas. Two people are assigned to this area, one person is working full-time on evaluating institutionalization of processes, and one person is working part-time on process development. Process owners are not in place to assist, monitor, and review processes.
Performance Measures	8-29-01	Partial	Information on the program was being gathered and analyzed. An evaluation of data is being performed to determine the best way to present the information. Once this is accomplished, the remaining three main processes may be implemented.
Quality Assurance	In Draft	Partial	One person was working part-time on implementing this program. Plans for the program were still in draft. The program processes have not been implemented. The program is dependent on other programs being in place, such as the process improvement, and the assignment of process owners to assist in responsibilities of the program.
Award and Incentive Fee	1-22-02	Partial	Award Fee plans were approved in January 2002, delaying the implementation of its processes, specifically interim reviews of contractor performance. Plans are to perform the first interim review in late March 2002, approximately 2 months before the end of the first award fee evaluation period, August 13, 2001 to May 12, 2002.

SA-CMM is based on the best practices of organizations that successfully acquire software systems and products. SA-CMM is a model that describes the key elements of managing and improving the acquisition process in an organization. SA-CMM encompasses not just software but the broader system acquisition processes for systems, hardware, networks, and software. SEI's IDEAL model forms an infrastructure to guide organizations in planning and implementing an effective process improvement program and provides a usable, understandable approach to continuous improvement by outlining the steps necessary to establish a successful improvement program. The CMM is organized into five levels each of which comprises a set of process goals that, when satisfied, stabilize an important component of the software process. The five levels can be briefly described as:

Level 1 Initial

The software process is characterized as ad hoc, and occasionally even chaotic. Over commitment is characteristic of Level 1 organizations. During a crisis, projects typically abandon planned procedures.

Level 2 Repeatable

Basic project management processes are established to track cost, schedule, and functionality. Projects implement effective processes that are defined, documented, practiced, trained, measured, enforced, and improvable.

Level 3 Defined

The software process for both management and engineering activities is documented, standardized, and integrated into a standard software process for the organization.

Level 4 Managed

Detailed measures of the software process and product quality are collected. Both the software process and products are quantitatively understood and controlled.

Level 5 Optimizing

Continuous process improvement is enabled by quantitative feedback from the process and from piloting innovative ideas and technologies. The organization has the means to identify weaknesses and strengthen the process proactively, with the goal of preventing the occurrence of defects.

Task Order 1

Scope

- Establish the Program Management structure
- Develop processes and procedures
- Period of Performance - 18 months

- Subtask 1 Perform Program Management
- Subtask 2 Perform Program Planning, Control, and Scheduling
- Subtask 3 Provide Inputs to Cost-Benefit and Financial Analysis
- Subtask 4 Establish/Maintain a Program Management & Reporting System
- Subtask 5 Perform Risk Management
- Subtask 6 Perform Configuration Management
- Subtask 7 Perform Quality Assurance
- Subtask 8 Establish a Process Improvement Program
- Subtask 9 Perform Requirements Management
- Subtask 10 Support Organizational Change Management
- Subtask 11 Perform Communications Management
- Subtask 12 Perform Additional Program Level Activities

Task Order 2

Scope

- Perform Enterprise Architecture and Engineering
- Period of Performance - 18 months

- Subtask 1 Maintain Customs ELCM
- Subtask 2 Develop and Maintain the Enterprise Architecture
- Subtask 3 Develop/Maintain Enterprise Transition Sequencing Plan
- Subtask 4 Update the Enterprise Infrastructure Plan
- Subtask 5 Maintain Enterprise Technology Insertion
- Subtask 6 Perform/Develop Enterprise Architecture & Engineering
- Subtask 7 Develop/Maintain the Modernization Program Web Portal

Task Order 3

Scope

- Plan and define the requirements for the first increment of ACE
- Customs Subject Matter Experts will work on the Integrated Product Teams and contribute their knowledge and expertise to this effort
- Period of Performance - 6 months

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|-----------|---|
| Subtask 1 | Document Desired Business Results |
| Subtask 2 | Gather, Analyze, and Document High Level Requirements |
| Subtask 3 | Define/Document the ACE Architecture |
| Subtask 4 | Develop the ACS-to-ACE Transition and Sequencing Plan |
| Subtask 5 | Specify Detailed Requirements for ACE Increment 1 |
| Subtask 6 | Prepare Project Plan for ACE Increment 1 Business Results |
| Subtask 7 | Develop Planning Estimate |
| Subtask 8 | Prepare Top Level Plan - trade Compliance & International Trade Data System |
| Subtask 9 | Support ACE - Specific Organizational Change Management |

Appendix 5
Schedule of Ten Deliverables Selected for Review
As Of March 8, 2002

Deliverables	Due Date	Final Accepted by Customs	Workdays Late	Dates Deliverables/Drafts Issued & Number of Customs Comments	Comments/Issues Pending
Task 1-2 Integrated Baseline Reviews	1/18/02	IBR not performed	IBR not performed	IBR not performed	IBR should be scheduled and performed.
Task 1-3 Cost Benefit Analysis (CBA)	11/2/01	Accepted 11/8/01 Updated 12/14/01	Accepted incomplete deliverable	09/27/01 27 comments on draft 11/02/01 Final deliverable accepted, but updated on 12/14/01.	Customs accepted a CBA Plan 11/8/01 needing additional work and analysis for completion.
Task 1-5 Risk Management Process	10/18/01	11/20/01 3 comments	23	09/13/01 15 comments 10/18/01 courtesy reply 10/30/01 3 comments	Risk checklist needs to align with Risk Management Process Deliverable.
Task 1-9 Requirements Management System	11/13/01	Conditionally Accepted 12/4/01 With 10 comments	Pending TRC approval.	12/04/01 10 comments	Approval not yet received from the TRC.
Task 2-4 Enterprise Infrastructure	2/13/02 (Draft) 4/12/02 (Final)	Comments on draft being prepared	Comments in process	02/13/02 (Draft) comments in process	Customs stated draft is written at very high level and needs more work.

Appendix 5
Schedule of Ten Deliverables Selected for Review
As Of March 8, 2002

Deliverables	Due Date	Final Accepted by Customs	Workdays Late	Dates Deliverables/Drafts Issued & Number of Customs Comments	Comments/Issues Pending
T.O. 2-7 CMO Web Portal	12/20/01	Not completed	Not completed	CMO Web Portal not installed	The CMO Web Portal needs to be installed and operational at Customs Data Center.
T.O. 3-1 Desired Business Results	12/21/01	2/19/02	38	09/26/01 29 comments 11/19/01 eCP withdrew this version on 12/7/01 for additional work. 12/21/01 111 comments 01/29/02 2 comments	Overall performance was unacceptable, eCP must take action to improve process.
T.O. 3-4 ACE Transition and Sequencing Plan	1/30/02	Conditionally 1/25/02 Accepted 3/5/02	23	01/4/02 134 comments 01/30/02 74 comments 02/12/02 No comments	Deficiencies noted in eCP's methodology and definitions. Also written at high level.
T.O. 3-7 ACE CBA/Investment Strategy	1/11/02	3/5/02	35	09/26/01 16 comments 11/19/01 51 comments 01/11/02 Rejected by Customs 1/18/02. 02/12/02 38 comments	Surveys to collect CBA data from importers had a very low response.
T.O. 3-8 Top Level ACE Program Plan	1/30/02	3/05/02	23	09/26/01 16 comments 11/19/01 73 comments 01/30/02 50 comments 02/12/02 No comments	Inconsistencies between eCP documents including their organization, content & acronyms.



U.S. Customs Service

Memorandum

DATE: June 12, 2002

FILE: AUD-1-OP MD

MEMORANDUM FOR EDWARD G. COLEMAN
DIRECTOR, INFORMATION TECHNOLOGY AUDITS

FROM: Director,
Office of Planning

SUBJECT: Comments on Draft Audit Report on Customs ACE Program
Management

Thank you for providing us with a copy of your draft report entitled "ACE Development at Risk from Incomplete Management Systems" and the opportunity to discuss the issues in this report.

Customs is responsibly and prudently managing the admittedly significant risks associated with a program of the magnitude of Customs Modernization. In responding to this draft report, we are concerned about the adverse impression that the report title could leave with the hurried reader. Thus, we would like to suggest that the report title be revised to more accurately reflect the state of the program.

The Results in Brief section of the draft report presents a more credible picture of reality. There, the Inspector General says that "Customs long-term program plans are basically sound." It goes on to say that these plans can be implemented successfully through certain actions. Customs is taking those actions at the appropriate stages of the program. Highlights of those actions that are germane to the issues raised in this report include the following:

- Doubling the size of the Customs Modernization Office (CMO) to oversee application development and deployment.
- Implementing management controls in accordance with best practices articulated by the Software Engineering Institute's (SEI) Software Acquisition Capability Maturity Model. These controls are being implemented in priority order. Critical processes are in place and the CMO is more than 75 percent complete in development of all processes enumerated under the SEI model.
- Integrated baseline reviews have either been conducted or are scheduled for appropriate task orders issued since March 2002.

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Further, the monthly Cost Performance Review conducted by the CMO already addresses Inspector General concerns about assessing eCP performance against the cost baseline.

- Customs and eCP have revised the deliverables process based upon a detailed review of early experiences, and are collaborating in implementing revised procedures.

The attachments to this memorandum detail the specific actions that have been taken or are being taken to respond to the recommendations as well as general comments that relate to statements that need to be clarified prior to finalization of this report.

We have determined that the information in the audit does not warrant protection under the Freedom of Information Act.

If you have any questions regarding the comments, please have a member of your staff contact Ms. Michele Donahue at (202) 927-0957.



William F. Riley

Attachments

Attachment

Office of Inspector General Draft Audit Report:
Customs Automated Commercial Environment (ACE) Development at Risk From
Incomplete Management Systems

Response to Recommendations

Finding 1: Management Control Programs Need to be Fully Implemented

Recommendation 1: The Commissioner of Customs should ensure that a schedule is established to expedite the complete implementation of all six management control programs.

Customs Response: Concur. Customs is proceeding in the implementation of management controls in accordance with an established schedule. Examples of actions that have been taken since completion of audit work include:

- Three of the five remaining risk management procedures have been developed and approved. The remaining two procedures have been developed, reviewed, and are in the approval process.
- A series of award fee review sessions were held from March through May covering Contract Period 1, and plans exist for continuing such review sessions into September for Period 2 activities.
- The CMO is using the OIT Process Coordination Board's Process Domain Structure as the basis for forming domains and is in the process of selecting CMO Process Domain Owners.
- Initial performance metrics, including measures of deliverables, issues, risks, and cost performance are in place. Products reflecting these measures have been distributed to the Modernization Executive each month since March 2002.

Target Close Date: March 2003

Recommendation 2: The Commissioner of Customs should ensure that staffing is adequate to fully implement the programs properly, including the assignment of process owners to the specific processes within each of the programs.

Customs Response: Concur. By identifying 5 of 8 domain owners, Customs has initiated actions responsive to this recommendation. All process domain owners will be identified by August 2002.

Target Close Date: August 2002

Finding 2: Integrated Baseline Reviews Not Conducted

Recommendation 1: The Commissioner of Customs should ensure that the IBRs are regularly conducted for Task Orders issued after March 2002, as well as for Phase II of Task Order 2.

Customs Response: Concur. IBRs have either been conducted, or are scheduled, for appropriate Task Orders issued after March 2002. All planned IBRs for appropriate current task orders are scheduled to be completed by June 30, 2002. By appropriate, Customs means that it is conducting IBRs when it is reasonable to do so given the type, scope and duration of the task order.

Target Close Date: June 30, 2002

Finding 3: ACE Deliverable Processing Needs Improvement

Recommendation 1: The Commissioner of Customs should ensure that improvements are made in the processing of deliverables. Specifically, performance measures based on the deliverable quality issues, noted by Customs and this report, should be finalized. The measures should have a direct significant effect on the determination of award fee amounts.

Customs Response: Concur. The Award Fee Plan for Period 1 (8/13/01 thru 5/12/02) is dominated by performance metrics. These metrics either directly measure the quality and timeliness of eCP deliverables, or indirectly gauge the performance of the skills and assets used to assemble the deliverables. Each of the four award fee outcomes has criteria specifically related to deliverable quality. These metrics are being used in assessing performance in period 1. For period 2, the metrics will be reassessed by the Award Fee Working Group on a continuing basis. Also, for period 2, Customs has added a fifth outcome, Planning. Customs believes these actions are sufficient to close this recommendation.

Target Close Date: Closed

Recommendation 2: The Commissioner of Customs should ensure that improvements are made in the processing of deliverables. Specifically, the deliverable review process should ensure that products accepted are complete, edited, meet acceptable standards and written at a level needed by users.

Customs Response: Concur. Customs and eCP have revised the deliverables process based upon their early experience. eCP and Customs conducted a joint, facilitated Deliverables Lessons Learned session in late February, 2002. The results of the session were published in late March and there were 28 Action Items assigned to eCP and Customs personnel. They are being tracked in the eCP Action Items Database. The recommendations are being followed in the new Task Orders, as appropriate, and will directly contribute to the quality of the deliverables as defined in the OIG recommendation. For example:

- Increased collaboration is taking place within the new Task Orders. Customs personnel are attending the Peer Reviews and formal Inspections conducted by eCP. There is earlier and more active interaction between eCP personnel and the Subject Matter Experts (SMEs). At the Task Order 5 Integrated Baseline Review (IBR) meetings, eCP provided descriptions for each of the deliverables. These are reviewed by Customs personnel and not only set expectations, but also provide a standard for review.
- The Document Comment Form has been revised to impart more specific information to the eCP. Comments can be in six categories ranging from Critical to Observation. This will improve the communication between the reviewers and the authors.

Target Close Date: September 30, 2002

Recommendation 3: The Commissioner of Customs should ensure that improvements are made in the processing of deliverables. Specifically, the CMO should establish a formal system to track items and tasks that are not completed on accepted deliverables, but are agreed to be performed by eCP at a later date.

Customs Response: Concur. The CMO has been tracking issues surrounding deliverables through its weekly Status of eCP Deliverables report. The CMO will formalize this through creation of an administrative procedure.

Target Close Date: July 30, 2002

Attachment

Office of Inspector General Draft Audit Report:
Customs Automated Commercial Environment (ACE) Development at Risk From
Incomplete Management Systems

General Comments

Finding 1: Management Control Programs Need to be Fully Implemented

- (1) Page 6, Paragraph 2, sentence 2 states that "... all of the related processes were not completed for any of the programs." In fact, all processes were complete for the Risk Management Program - the supporting procedures were still being developed. This is an important distinction as a program can be successfully executed as long as the processes are in place and being followed.
- (2) Page 6, Paragraph 2, sentences 4 and 5 state that "These management controls should be implemented prior to the start of software development in Task Order 4. However, we could not evaluate the integration and effectiveness of the control programs since they had not been fully implemented." Customs agrees that it is important that critical aspects of all Programs, except the Quality Assurance Program, be in place prior to starting software development in Task Order 4. However, Customs has focused on implementing the most critical plans, processes and procedures first. Customs believes that all critical components of the other programs are currently implemented and sufficiently integrated to start Task Order 4.

Finding 2: Integrated Baseline Reviews Not Conducted

- (1) Page 11, paragraph 2, third sentence states that "An IBR is a joint effort where the contractor gains insights on their customer, and customers gain insights on their contractors and an early warning of deviations from plans." The customer does not get early warning of deviations from plans at an IBR. The IBR is conducted at the beginning of a task order to establish the integrated baseline, which is then used to monitor the work. Thus there would be no deviations at this point.
- (2) Page 11, paragraph 2, fourth sentence states that "it is important to perform an IBR because it can show how well eCP is managing..." Again, the IBR is at the beginning of the task order, thus the eCP is not yet managing to the 5 areas listed. The vehicle used to address the intent of this sentence is the Monthly Cost Performance Review (CPR). The CPR is conducted using the baseline created during the IBR and does show how well the eCP is managing to that baseline. This paragraph would be more clear if OIG focused on the fact that the IBR is critical to setting the integrated baseline by

which the task order will be managed through monthly CPRs. This baseline is established at the beginning of the task order.

- (3) Page 12, paragraph 2, second sentence states that "an IBR was supposed to be performed monthly." Customs realizes that this was a quote from a CMO letter to eCP. The CMO inadvertently made that statement, but subsequently clarified its position as the CMO and eCP worked together to establish the content and timing of the IBRs. The fact is that an IBR is conducted at the beginning of a task order and then Cost Performance Reviews (CPRs) are performed monthly.

Finding 3: ACE Deliverable Processing Needs Improvement

- (1) Recommendation 3 appears to imply that the CMO was not tracking incomplete actions related to the accepted deliverables. In fact, CMO personnel prepare a weekly report called the Status of eCP Deliverables. One section of the report is used to track open action items resulting from any contractual letters including contingencies related to accepted deliverables. This report is reviewed every week to determine if items have been closed or require follow-up.

Appendix 7
Major Contributors To This Report

Edward G. Coleman, Director of Information Technology Audits
George W. Tabb, Regional Inspector General for Audit (Southern)
Gene Wendt, Audit Manager
Robert Edwards, Auditor-In-Charge
Carlos Berrios, Auditor
Eric Barnett, Referencer

The Department of the Treasury

Chief Information Officer
Office of Accounting and Internal Control

U.S. Customs Service

Commissioner
Assistant Commissioner, Office of Information Technology
Director, Modernization Office
Director, Office of Planning and Evaluations

Office of Management and Budget

Budget Examiner